

undercurrent

The Private, Exclusive Guide for Serious Divers

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Cayman Aggressor IV, Cayman Islands

a less-pricey alternative to Cayman resorts?

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Dear Reader:

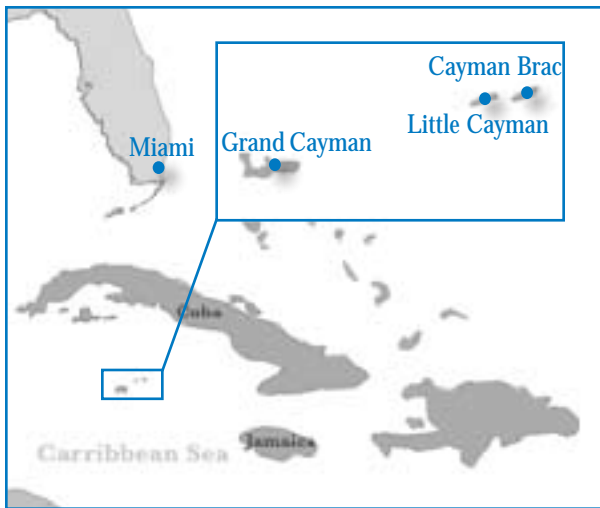
As I boarded the Cayman Aggressor IV in June, I fretted about the trip ahead. How would it compare to my past three years of serious Pacific diving in Fiji, Palau, and Indonesia? Any Caribbean liveaboard would have a hard act to follow. But limitations in money and vacation time mandated that I could only dive either the northern Caribbean or my local lake. I chose the former, and selected the Cayman Aggressor to dive all three Cayman Islands instead of being resort-based at one. With the Caymans going upscale and becoming less affordable, five daily dives on a liveaboard offered the better value.

I was cheered by a delicious barbecue dinner and the initial briefing about the boat. Cantankerous Captain Sam of past trips was gone, replaced by an amiable Brit named Phil, who had previously steered the erstwhile Tahiti Aggressor. I had read Chapbook reports about Captain Sam making divers change into dry clothes before descending to their cabins, but Phil just asked us to conserve water and not take deck towels below. The only dark note Phil sounded was predicted high winds that might preclude the crossing to Bloody Bay Wall.

My first dive at Tarpon Alley on Grand Cayman eased my fears about being bored with Caribbean diving. A small turtle swam past as soon as I entered the clear, 82-degree water. I spent most of the dive photographing an enormous school of tarpon hanging in heavy sheets over coral fingers grooved by deep sand chutes. I also renewed my



Cayman Aggressor IV



acquaintance with several species of colorful Caribbean reef fish. The crew didn't object to my 70-minute dive time and draped me in a warm towel after I left the hot deck showers.

But ill winds were blowing at our backs. The Aggressor couldn't make the crossing to Little Cayman on Sunday as hoped, and the seas weren't looking promising for Monday. Captain Phil motored to dive sites near George Town for those two days and we made the obligatory visit to Stingray City (not my type of dive site because I prefer to observe wildlife in the wild). The diving at these sites was uninspiring, with limited fish and lots of dead coral.

On Wednesday morning, Captain Phil announced that not only would we be unable to go to Bloody Bay Wall, the first dive was cancelled. One of the generators had failed so the boat had to seek repairs at George Town. Phil, fearing mutiny, was relieved when we divers only showed polite disappointment, mostly because the diving had been poor so far. We learned during the week that other equipment, like the air conditioning system, needed major work. The 110-foot boat, built in 1998, was clean, attractive and refitted just this year, but it seemed like the company was still playing catchup on mechanical maintenance.

After the generator was repaired, the Aggressor motored to the north end, then the east end, of Grand Cayman, and the diving improved. We never made it to Little Cayman or Cayman Brac. The corals had been badly damaged by Hurricane Ivan so the real beauty appeared below 60 feet. There was typically little current and good visibility. At Hammerhead Point, the sheer wall was encrusted in branching black coral, wire coral and tangled rope sponges. A pair of eagle rays accompanied by a hawks-bill turtle soared through the blue. The turtle lingered to feast on a barrel sponge and pose for photographers. French, gray, and queen angels mingled with triggerfish, small Nassau and tiger groupers, puffer fish, scrawled filefish, and juvenile spotted drums. Tall sea plumes in the shallower areas harbored slender filefish, while numerous flamingo tongues feasted on knobby sea rods.

Getting back onboard was always easy on the wide ladders. I am 60 years old and short but I trotted up the ladders under full gear as easily at the end of my 26th dive as my first. Even with a full load of 18 divers, the dive deck felt spacious. Aluminum 80's were filled in the dive stations to 3,000 psi. I initially set up my dive gear, then the crew assisted as needed. A covered bench stored my mask, light and other gear. I hung my wetsuit above my tank and placed my fins in a rack on the dive platform. With nine photographers on board, the three-tiered camera table was full but there were plenty of power strips.

Belizean chef Yanis, aided by Savio from southern India, served up delicious meals and snacks. Continental breakfast appeared at 6:30, followed by the full cooked meal at 7:00. I made inroads into the fresh fruit tray and nibbled a bagel or toast before moving on to eggs of all styles, omelets, or pancakes. Each lunch began with a different homemade soup -- I especially

Cayman Aggressor IV

Diving (<i>experienced</i>)	★★★★
<i>(if you get to the other islands)</i>	
Diving (<i>beginners</i>)	★★★
<i>(some walls start deep)</i>	
Snorkeling	★
Accommodation	★★★★★
Food	★★★★★
Service and Attitude	★★★★★
Money's Worth	★★★★

★ = poor ★★★★★ = excellent

Caribbean Scale

enjoyed the corn-and-pepper soup and a Caribbean version of hot-and-sour. Deli sandwiches, fajitas, or a medley of salads and pastas followed. Dinners were an interesting salad course, followed by a meat or fish entrée. The barbecued rib dinner was popular with the southerners, a tough audience. My favorite was fish spiced Belizean style. Fresh, well-prepared veggies abounded. All my meals were health spa-suitable had I not eaten the home-made cheesecake, key lime pie and bread pudding. Morning snacks were sweet and afternoon snacks savory - - banana bread and conch fritters were standouts. Savio stayed up late to pour hot cocoa for night divers and made sure the coffee addicts on board always had a fresh pot.

The divers on my trip were loosely connected with one dive shop although most didn't know each other, but dining tables clustered together in the cozy salon made it easy to start bonding. Ages ranged from mid-twenties to 60. The doctors and lawyers talked about their jobs while the rest of us talked about diving and food. The crew's celebrity of the week was a gentleman who loved ice cream -- no matter what the dessert, he wanted ice cream, too. By the third night, the crew served him cheesecake à la mode without prompting.

My standard deluxe cabin was quiet and comfortable. Big suitcases were stored on shore for the week, while my small suitcase slid easily under the bunk. Two large drawers and a closet provided decent storage but because my spouse and I could sleep comfortably together in the bottom double bunk, we also used the upper single bunk for storage. Both sides of the bunk had reading lights, and we could watch DVDs on our small television. The air-conditioning was blissfully not too cold in the cabin or the salon. A plumbing problem on the first day was repaired promptly and cleaned up thoroughly. Crew cleaned cabins daily and changed the towels. My bathroom was compact -- a curtain separated the toilet from the shower -- but adequate, with plenty of hot water and water pressure.

At Rum Point, I swam over the blue along a sheer wall, watching schools of horse-eye jacks, yellow jacks and Creole wrasse well up beneath me. As I topped the wall, four eagle rays sailed past, then back again to check me out. A dozen lobsters peeked out from crevices, but a brave one scuttled over the coral in broad daylight. I also encountered three greater soapfish, a honeycomb cowfish, and a smooth trunkfish among other critters. A pair of bridled burrfish started their dance of love as I watched.

The healthiest corals I saw around Grand Cayman were at Babylon. I enjoyed the pretty swimthroughs at Trinity Caves but had more fun seeing scorpionfish and other fierce-looking creatures at the top. Exploring the expanse of white sand behind the

Industrial Oxygen in My Nitrox?

To produce Nitrox, a dive operator must use oxygen, of course. When one of our readers, who asked to remain anonymous, learned the Honduras resort he was visiting used industrial oxygen instead of medical oxygen, he became concerned. He declined the Nitrox, went back to compressed air and when he got home, asked us whether he should have been concerned.

In short, no. In fact, that very topic was covered recently by C. Claiborne Bay in the *New York Times* Science Thursday column, about a veterinarian who found that all he could buy was industrial oxygen.

"There is practically no difference between industrial and medical oxygen," said Ravi K. Bansal, CEO of the Airsep Corporation in Buffalo, N.Y., which produces both kinds. "The two come from the same source and are produced the same way," he said, but to sell oxygen as medical gas, as with any prescription drug, regulations must be complied with to ensure that it is being properly dispensed and that, in the event of a recall, it is traceable with a lot number.

"It needs to be tracked, and sometimes tested if it is repackaged, as it moves along the distribution channel," Dr. Bansal said. "Industrial oxygen contains no harmful contaminants and is separated from air by a process in which air, collected in its gaseous form, is liquefied at very cold temperatures. The different constituent gases boil off at different temperatures, making it possible to capture pure oxygen."

If you're using Nitrox, not matter where you dive, you may be breathing industrial oxygen. It's cheaper, easier to obtain, and differs insignificantly from medical oxygen. In fact, medical oxygen bottles in Third World countries, and maybe a lot of other places, may have the same stuff, too.

wall, I found yellowhead jawfish, sand tilefish and a myriad of garden eels. At Round Rock, I encountered a four-foot grouper circled by a pair of midnight parrotfish. Cleaning stations dotted the surrounding coral where wrasse, Pedersen cleaning shrimp and banded coral shrimp serviced a variety of fish. I always felt like I was diving in a giant bath set at a comfortable 82 degrees. Air temperatures reached the high 80's at midday but cooled 10 degrees at night.

I spent my surface intervals on the upper deck, sometimes sunning on comfortable chaise lounges, other times relaxing at tables in the covered back deck. A wet bar area offered Coke, Diet Coke and root beer, as well as Coors and decent Chilean wines

Land-Based Recommendations for the Caymans

Visions of hurricane-damaged reefs, overpriced food and loads of cruiseship passengers may come to mind when you think of the Caymans. However, many *Undercurrent* subscribers who recently stayed there will agree with Michael Zagachin (Peabody, MA), who says, "The Caymans are not cheap, but the diving is the best in the Caribbean. You're getting what you paid for."

Paul Selden (Portage, MI) chose Grand Cayman last April and reports that reefs and walls are recovering nicely from Hurricane Ivan in 2004. "They were filled with abundant life, beautiful corals and colorful sponges." He dived with Eden Rock Diving Center, calling its multi-dive package a "best buy." "They were willing to commit to afternoon boat dives when most would not. Owner Stuart Freeman kept his word to take me out one day, even though I was the only paying diver on board." (Web site: www.edenrock.com)

Brent Barnes (Edmond, OK) went far from the madding crowd to Grand Cayman's East End last March and stayed at Compass Point. "Beautiful, well-maintained condos, all oceanfront with full kitchens and cable TV," he says. A new grocery store is a mile away, erasing the need to drive to the west end. Ocean Frontiers provided top service. "I set up my gear the first day and never touched it after that. After the final dive of the day, it was rinsed and set up for the next day." The East End sites are healthier and less trafficked, Barnes reports. "The walls are incredible, with multiple crevices, tunnels, swimthroughs and pinnacles. Healthy coral and good fish life." The wall sites start deeper than in the west end, around 60 to 80 feet, so the diving is a bit more advanced but certainly not difficult. "The Ocean Frontiers diver tends to be more experienced than most, and that is how the operation treats its customers." (Web sites: www.compasspoint.ky; www.oceanfrontiers.com) Another Grand Cayman favorite for serious divers is Divetech, located next to Cobalt Coast Resort. (www.divetech.com; www.cobaltcoast.com)

The best diving is at Little Cayman. Michael Zagachin stayed at Paradise Villas last April, and Jerry Hobart

(Ransomville, NY) stayed at Little Cayman Beach Resort (LCBR) during the same month. "The reefs are in much better shape than Grand Cayman with fewer divers and less hurricane damage, and turtles, rays, and fish are more abundant," says Hobart. Zagachin dived with Conch Club Divers, which recently combined with Paradise Divers and uses a "comfortable, uncrowded" 42-foot Newton boat. "The atmosphere is laid back, full of jokes, but everything works like clockwork." (www.conchclub.com/divers) Hobart went with Reef Divers at LCBR. "On the first day, gear was picked up at my room and transported to the boat. The only equipment I handled was my wetsuit, fins and mask. BCs and tanks were brought to me at the back of the boat just before entering the water." (www.littlecayman.com/diving) Bring a good book for after dinner. "If you are after night-life, you are on the wrong island," says Zagachin. "Ocean is the only noise you'll hear."

At Cayman Brac, In Depth Watersports has filled the void left when Divi Tiara closed. It is at the old Divi dock and run by long-time Reef Divers and Divi instructor, Craig Burhart. Al Jones (Henderson, NV), who dived with them in June, says, "He and his two other instructors, Katie and Rory, even washed my gear at the end of each day." Burhart arranges private housing for divers in the many private homes he manages for second-homeowners, from total luxury to basic economy. "There are a few markets to buy food, but bring the other things you really need with you." (www.indepthwatersports.com)

Cayman Air, the only interisland airline, can add misery to your vacation. For his May trip, James Heimer (Houston, TX) said it limited his checked luggage to 55 pounds and one carryon of up to 15 pounds. Overweight luggage was charged at 50 cents per pound. "Each member of our group had one dive bag, one clothing bag and two carryons for cameras and housings, but Cayman Air couldn't bring it all, so some had to be left behind for delivery the next day. As a result, some had to rent dive gear and couldn't take photos on the first dive. On the way home, as much luggage as possible had to be shipped out at 3 p.m. the day before departure to make sure it was in Grand Cayman for connecting flights. Inconvenient, but it worked." We have reports from some readers required to send gear home two days in advance of departure.

for anyone finished with diving for the day. All beverages were gratis. The salon held a library of DVDs, fish ID books and third-rate novels. Those who opted out of night dives watched movies in their cabins or lounged in the hot tub after dinner with aperitifs. I did all night dives and enjoyed seeing multiple crabs, octopi, comet stars, basket stars, peppermint shrimp, hunting yellow and southern stingrays, odd snails, a free-swimming sharptail eel, and lobsters by the dozen. Some sites offered better diving after dark than by day, and some were deeper than 50 feet. Then I too took advantage of the hot tub, pondering the day's worth of dives.

The dive crew of Jon, Kathy and Lowell gave thorough briefings. Aided by Captain Phil, they worked the dive deck and quickly learned the preferences and practices of each diver. By the second day, they knew who handed up just camera and fins and who also handed up weights and BCs. Crew carried gear down to the dive platform for one woman with back problems. Lowell cheerfully served as a dive buddy for an inexperienced single diver. No one questioned my dive times and profiles, I just signed back onto the deck with my maximum depth and time. Divers could choose to go their own way underwater in groups of two to four.

A full array of safety equipment was onboard, and a skiff was always in the water when divers were. But at Bonnie's Arch, I was dropped without warning into a rippling current. I kicked valiantly to the edge of the wall, thinking I would drop down behind the coral for shelter from the current. Not so. While I glimpsed the arch, the view wasn't worth the effort. Several divers missed their safety stops, feeling it was safer to get back onboard. The current's strength surprised the crew as well, so a divemaster went into the water first at the next site to check the current.

Even some of the less attractive sites rewarded me for my efforts. I saw diamond blennies, arrow gobies, and saddled gobies. Giant anemones seethed with tiny banded clinging crabs. Arrow crabs and neck crabs teemed over the reefs. And I actually saw a ciliated false squilla -- not so dramatic as its Pacific cousins in the same mantis shrimp family, but still cool.

Was the Cayman Aggressor worth its hefty ticket price, plus a \$100 fuel surcharge? Had we made the crossing to Little Cayman and Cayman Brac, my answer would be a resounding yes. Cayman's North End and East End provide good diving, but a week diving only Grand Cayman sites from a liveaboard is disappointing when you're expecting to visit other islands. And not making the crossing to Bloody Bay Wall rankled, especially when I learned that the Nekton Rorqual had made the crossing that same week. A review of the past year's Captain's Logs on the Aggressor Fleet's website revealed that the Cayman Aggressor made the crossing to Bloody Bay Wall on 27 out of 35 cruises. The Aggressor Web site says the surcharge is there because most fuel is consumed by the generators, regardless of travel distance. Sure, fuel costs are higher, but the reasoning seems frivolous. My dive group did not have to pay the fee, but that was only because we booked through a dive shop, which had to cajole and threaten the company into negating the charge. A group of independent divers would have had to pay it.

The Worst Kind of Name-Dropping

We like all of our subscribers, except those that ruin dive trips and use our name to threaten dive operators. Good subscribers Barbara Shiveley and Ken Scott (La Plata, MD) ran into a few bad ones on their dive trip with Sea Eye Diving in Grand Turk last June.

"A group of men from a dive club in the South arrived with all their toys, including underwater scooters," says Shiveley. "They were told the boat, a little Carolina skiff for eight divers, wasn't large enough to accommodate the scooters but they dragged them aboard anyway. Their buzzing around annoyed other divers, scared the fish we were trying to watch and photograph, and generally ruined otherwise lovely dives.

"On top of this, they actually threatened the operator by saying if they were not treated really well, they would write bad things about the operation to *Undercurrent!*"

We haven't yet got any bad reviews about Sea Eye Diving from scooter-wielding divers but if we do, we'll cancel their subscriptions.

Still, it's always easier to dive from a liveboard. Land resorts like Little Cayman Beach Resort and the Southern Cross Club charge \$2,000 to \$3,200 for a full-meal plan with only three dives a day. I dove five times a day, followed by night dives, with bottom times limited only by deco limits and my own air consumption. I paid \$100 for unlimited Nitrox fills, while land-based resorts charge \$10 to \$15 per tank. Dives were diverse and filled with enough critters to keep everyone, from the one newbie on board to old-timers like me, satisfied. The boat has a good crew and captain in place, but Aggressor Cruises needs to take care of mechanical issues. They should also think twice about that fuel surcharge when they're not taking divers to two out of three destinations they paid to dive at.

--P.A.K.



Diver's Compass: Cayman Aggressor IV rates go from \$2,095 for a twin to \$2,495 for a suite . . . Divers over age 65 get a \$100 discount . . . Unlimited Nitrox fills for \$100 . . . Plankton blooms in spring and autumn can reduce visibility, and the worst time for crossing to Little Cayman and Cayman Brac is during the rainy season, starting in May and peaking in October . . . American Airlines has the most frequent and cheapest flights to George Town via Miami, ranging from \$345 to \$500 for fall/winter flights . . . Aggressor Cruises provided transport to and from the airport; those with later return flights could be dropped at the Comfort Inn on Seven Mile Beach to use the pool and beach facilities for free . . . Web site: www.aggressor.com

Galapagos Liveboards Shut Down

In June, the Galapagos National Park (GNP) made it onto UNESCO's endangered list of World Heritage sites, because of destructive mass tourism and commercial fishing. The number of days spent by passengers on ships in the area has increased by 150 percent in the last 15 years.

A month later, the GNP suddenly suspended dive operations in the area, affecting 15 liveboards. Some have stopped running, others are only doing southern itineraries and skipping Wolf and Darwin Islands. At press time, the only yachts not affected were Peter Hughes' *Sky Dancer* and the *Galapagos Aggressors* I and II. They have GNP permits to combine diving and land activities while the others do not.

"Sport diving in the Galapagos' marine reserve is not allowed for boats that don't have assigned dive sites in their itineraries," says Edwin Nuala, the GNP's director of tourism management. "In some cases, tourism boats did diving without authorization, and that is the reason why the GNP has restored the corresponding legal actions."

Angry liveboard owners say they were not given time to get permits before the shutdown, and the GNP hadn't required these permits in the 18 years liveboards have been diving. Marc Bernardi, owner of dive tour agency Aquatic Encounters, questions why dive boats were singled out instead of land-based tours. "It was an easy way for the GNP to cut a piece out of the pie, but divers are less detrimental to the environment than land-based visitors."

According to British magazine *DIVE*, the GNP faced criticism from the fishing lobby, which says tourist agencies often managed to bend the rules. Ironically, a month after the dive boat shutdown, Ecuador lifted a ban on the sale of shark fins caught accidentally. But with no way to determine whether a shark was caught accidentally or intentionally, fishermen regard the move as a green light to kill as many as they want. Hundreds of sharks are being slaughtered daily off the coast of Ecuador, including several species near extinction. The Galapagos is one of the last areas to see schools of sharks, so concerned divers should protest to the Ecuadorean ambassador in their country. In the U.S., e-mail Ambassador Luis Gallegos at embassy@ecuador.org.

Nuala says GNP and UNESCO officials are analyzing a new tourism model for the islands, including a system that would give Ecuadorean dive operators the authorization to run dive operations. The liveboards are negotiating with Ecuador's government to reopen dive operations. Ken Weemhoff of Galapagos Adventures says an agreement may soon be worked out to let dive boats finish their 2007 trips and apply for dive permits in 2008. "Divers with trips in 2008 shouldn't be worried, but those with trips next week or next month should be watching closely," he says. If you have booked a GNP dive trip, contact your liveboard company regularly to get the latest news because the situation is constantly changing.

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- * see what we had to say about travel restrictions and weight limits
- * get the latest on flying after diving
- * see how your dive insurance policy compares to others
- * find the best source of travel insurance for divers

Second, all the Undercurrent reviews, by our writers who pay their own way and travel anonymously, are there for your perusal.

- * liveboards from the Caribbean to Indonesia, from Hawaii to the Red Sea, with details about the accommodations, on board policy, the best cabin to reserve and, of course, the diving
- * resorts in Fiji, Belize, Bali, the Bahamas. While the management may have changed and the food improved (we hope), if we found the diving so-so before, you can be sure it won't be any better today. Don't spend big money on a trip without researching it.

Third, you can research nearly 10 years of Chapbook Reviews, totaling more than 10,000. Get the water temperatures, visibility, tips on tipping, if unlimited diving actually means three tanks a day, and whether you're treated like a serious diver or a newbie. We edit every report, throw out those we deem biased, and do our best to ensure they are accurate and informative.

Fourth, you can review hundreds of recent reports submitted online for this year's Chapbook. They're there, unedited, for your review.

Fifth, if you can't wait to get your issue, it will appear online on the first of each month for you to print out.

Finally, there's a seasonal planner, a compendium of our e-mails, 10 years of Flotsam and Jetsam, fun stories about dive operations that don't let you pee in your wetsuit, tragic pieces about why divers die (and what you can do to insure you're not among them), and a number of other features you can enjoy.

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Travel Report Form



Fill out online at www.undercurrent.org/members/UCnow/ma_rdrprt.php

DIVER INFORMATION

Your name _____ Telephone (_____) _____
Address _____ City _____ State _____ Zip _____
E-mail address _____ May we publish your e-mail address? yes no
How many dives have you logged? _____ Where else have you been diving? _____

TRIP INFORMATION

Name of resort or liveaboard _____ Name of dive operation _____
Location (e.g., island, country) _____ Date of visit (month/year) _____ / _____

Circle one or more of the following that best describes the overall water conditions during your trip.

calm and flat choppy surge strong currents no currents

Water temperature was ____° to ____° F. Wetsuit yes no _____ mm Water visibility was ____ to ____ ft.

Could you dive your own profile? yes no What restrictions were enforced while diving? (depth limits, etc.) _____

Select the words that best describe what you encountered on your trip.

Sharks: none 1 or 2 schools **Turtles:** none 1 or 2 more than 2
Mantas: none 1 or 2 squadrons **Dolphins:** none 1 or 2 schools

Rate the following by circling a number. (*Five is best and one is worst.*)

Corals.....	1	2	3	4	5	Diving for experienced	1	2	3	4	5
Tropical fish.....	1	2	3	4	5	Condition of accommodations ..	1	2	3	4	5
Large fish.....	1	2	3	4	5	Level of service.....	1	2	3	4	5
Pelagics	1	2	3	4	5	Quality of the food.....	1	2	3	4	5
Small critters.....	1	2	3	4	5	Dive operations	1	2	3	4	5
Overall diving for beginners.....	1	2	3	4	5	Shore diving	1	2	3	4	5

COMMENTS Please tell us the good, the bad, and what you wish you had known before you left home.

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The Skinny on No-See-Ums

avoid being bugged by their bites

Every year, we get reports from *Undercurrent* subscribers about how swarms of no-see-ums hampered shore diving, cut beachside bar time short, and left them with a vacation souvenir of nasty bites, bumps and welts. In some cases, reactions to the bites have kept divers out of the water.

The Bay Islands in Honduras are the worst. John and Marilyn Walker (Castro Valley, CA) were there last May, staying at Fantasy Island, and were frequently bit, even indoors. "The island in general features many biting insects, but even though we sprayed with DEET and slept with the air conditioner on, we still got red, itchy welts," they wrote.

Christopher Mohr (Dublin, OH), who also stayed at Fantasy Island, was amazed how intense and determined they were in their hunt for human blood. "They were bad unless you covered yourself with insect repellent. The bites were still on us almost a week after we returned home. The resort was diligent in spraying, which helped, but these insects are worth paying attention to – they can be a problem."

They're a problem nearly everywhere in the Caribbean, and I can attest to that. While lying on a beach in the Bahamas, I got 147 bites, which ruined a day of diving. On the Honduran island of Guanaja, they chewed me up again, leaving 60 marks on me while I waited for a 7:30 a.m. flight.

Regardless of where you are in the Caribbean, chances are you'll get a few bites.

The no-see-um obviously gets its name because it is nearly invisible, small enough to go through window screens. The ones coming at me on the Utila beach were little black dots the size of a period, flying down at me like a miniature fleet of Luftwaffe. The scientific name for the no-see-um is *Ceratopogonidae*, but it has accumulated more common names, including *sand flea*, *sand fly*, *biting midge* and *punky*. They're common to wet areas like beaches, wetlands and creeks. Divers will experience them at their worst in Honduras, Nicaragua, Belize and Mexico's southern coasts. Many resorts spray their grounds but can't get them all – besides the Fantasy Island reports we mentioned above, Belize's Isla Marisol resort is also a big breeding ground. And of course like any blight, no-see-ums breed like crazy. They lay eggs in standing water, where larvae hatch and feed on dead vegetation. Within just a few days, the larva becomes a pupa, then an adult that leaves the nest in search of food.

Though one-third the size of a mosquito, its bite is inversely more painful. While mosquito bites cause raised lumps on the skin that become very itchy, they can be soothed with calomine lotion, Benadryl, or aloe vera. No-see-um bites result in typically a whole bunch of red welts that irritate the skin, are slow to deflate, and cause three to four days of severe itching. No-see-ums on the beach will bite most often on the ankles and lower legs, just because they're closer to the ground. But if you're unlucky enough to pass through a dark swarm of them, no part of your body is off limits and they could fly into your eyes, ears, nose or mouth.

Every person reacts differently to no-see-um bites. Two people may receive an equal number of bites, and one will not be affected while the other will turn into a walking pincushion. For divers who suffer allergic reactions, one treatment of antihistamines may work for one person, while another may need a bigger, stronger dose of something more potent.

Bigger Than Its Bite

At times, a no-see-um bite can lead to something far worse than a red welt and uncomfortable dive days. A few years ago, we reported the story of *Undercurrent* readers Barry Lipman and Ingrid Preuss and their no-see-um-plagued visit to Guanaja. The bugs ruined a beach picnic when Lipman received several hundred bites and had to flee the beach. That night, he developed a 102-degree fever and discovered that he was covered with little itching bumps.

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Many Sunscreens are Short on Protection

According to recent studies, you might be getting less than half the sunburn protection shown on sunscreen labels when you're out on the dive boat.

Consumer Reports tested 19 sunscreens and found that some provide minimal protection against ultraviolet A (UVA) radiation, which can cause skin cancer and wrinkles. However, UVA is not considered in the sun-protection factor (SPF) number listed on sunscreen products. That number refers to protection against UVB radiation, a different wavelength that can also cause skin cancer and sunburns.

Consumer Reports' top choice was Neutrogena Ultra Sheer Dry-Touch sunscreen with an SPF 45; it is water-resistant and tested "excellent," scoring 86 out of 100 for protecting against both UVA and UVB. Runner-ups were Hawaiian Tropic's Ozone Sport Grip SPF 30+ and 15 Plus All Day Waterproof, both waterproof and scoring 84 and 83 respectively. Forget Bull Frog, found in many dive shops - it scored only 45, tied for 15th out of the 19. The Bull Frog Quik Gel Sport Spray SPF 36 scored "excellent" for UVB protection but only "fair" for UVA protection.

The nonprofit Environmental Working Group (EWG) investigated 786 name-brand sunscreens and found that one of every eight high-SPF sunscreens don't protect from UVA radiation. Its top-ranked choice was UV Natural Sport SPF 30+. Bull Frog scored better in this study - its 13 products all scored 7 out of 10. However, Avon Skin-So-Soft Bug Guard Plus SPF 30, a diver's favorite, only scored 2.

The EWG says that only 17 percent of sunscreens on the market are both safe and effective in blocking UVA and UVB radiation. Only twelve percent of sunscreens with SPF 30 or higher protect from sunburn, while the rest break down quickly in the sun. Worse, half the sunscreens on the market have claims that are considered "unacceptable" or misleading under the FDA's sunscreen safety standards.

In the meantime, choose a sunscreen with maximum protection against both UVA and UVB rays, preferably one labeled very water resistant or waterproof, and featuring an SPF of at least 30. And be sure to use enough. To get the labeled protection when wearing a swimsuit, you'll need to use two to three tablespoons of sunscreen. Reapply it every two hours, as well as after every dive or snorkel.

A six-day course of prednisone alleviated his symptoms and allowed him to continue diving, but Preuss was not as lucky. Four months after the trip, she developed small, reddish blemishes on her face at the locations of some no-see-um bites. A dermatologist diagnosed it as cystic acne, but the blemishes grew into ulcerated lesions. It took Preuss a trip to Curaçao to visit specialists in order to get an accurate diagnosis: leishmaniasis.

Not every type of no-see-um carries the disease. Scientists have found the culprits to be no-see-ums of the genera *Phlebotomus*, typically found in Asia and Africa, and *Lutzomyia*, found in Latin America and the Caribbean. Like mosquitoes, gestating female no-see-ums hungry for protein search for a "blood meal," and in the process can transmit one of the twenty-plus species of protozoan parasites responsible for the disease. Lipman was told that the fever and rash he developed in Guanaja the night after receiving hundreds of no-see-um bites were not the result of leishmaniasis but a reaction to the toxins he received from the bites themselves. Multiple no-see-um bites can also cause death by kidney failure from their toxins alone, without any other infectious agent involved.

While leishmaniasis affects 12 million people in 88 countries (with two million new infections annually), most of the high-risk areas are not dive destinations. However, leishmaniasis is well-entrenched in Mexico, Honduras, Belize and other parts of Central America. It also appears to be spreading to some islands in the Caribbean, including Trinidad

and Hispaniola. Elsewhere, Thailand and Egypt have also reported cases.

Though leishmaniasis accounts for less than five percent of the tropical infections American travelers return with each year, unless the victim consults a physician specializing in tropical medicine, diagnosis is often inaccurate. The disease itself is difficult to cure and victims are prone to recurrences. For decades antimony (sodium stibogluconate) has been considered the most effective treatment, but the three-week intravenous regimen is toxic in itself, and the parasite is reportedly becoming resistant in some areas. Other treatments are available but no cure is 100 percent effective, and there are currently no preventative medications or vaccines.

Signs of leishmaniasis are sores that change in size and appearance over time. They often end up looking somewhat like a volcano, with a raised edge and central crater. Some sores are covered by a scab and can be painless or painful. Some people also have swollen glands near the sores (for example, under the arm if the sores are on the arm or hand). If you fear persistent sores are signaling leishmaniasis, ask for a referral to a tropical medicine specialist or contact the U.S. Centers for Disease Control (www.cdc.gov), which can help clinicians with biopsies and cultures, and recommend and provide medication.

You Can't Beat DEET

Fortunately, the chances are slim that you'll die from a no-see-um bite, but if you are a person who experiences strong

reactions to bee stings or mosquito bites, chances are you'll also react strongly to these.

The first line of defense is dousing yourself with insect repellents containing at least 30 percent DEET. Some divers report success with cactus juice, a repellent sold in Roatan that comes in a brown bottle and smells like Citronella or Avon's Skin-So-Soft, although Consumer Reports recently found the latter offered no protection at all against the aedes mosquito, an aggressive species that can carry dengue fever. Most likely, the people who found these questionable remedies helpful wouldn't be prone to attacks anyhow.

A more aggressive measure is applying concentrated doses of DEET. Generally, the higher concentration of the chemical DEET, the more effective the repellent. *Consumer Reports'* top-rated Deep Woods Off with 98 percent DEET kept the aedes away for 12 hours. Products with 30 to 34 percent DEET protected for at least five hours, while those with seven percent DEET lasted only an hour against the aedes.

The CDC recently recommended two other active ingredients to fight bites. One is picardin, which is odorless and non-greasy. *Consumer Reports* recommends Cutter Advanced, which prevents bites for two to three hours for aggressive species, eight hours for less so. Another is oil of lemon eucalyptus, which the CDC says is as effective as DEET. *Consumer Reports* tested Repel Lemon Eucalyptus spray against another repellent containing 10 percent DEET and found that Repel prevented bites for four to seven hours for aggressive mosquito species, and more than 12 hours for less aggressive mosquitoes, longer than the DEET repellent and picardin.

DEET Plus Sunscreen a No-No

While it's safe to apply it regularly over a two-week vacation, don't use it with sunscreen. Recent studies using animal and human skin cells suggest the mixture might increase DEET absorption but might not make sunscreen not protect as well. About 20 versions of sunscreen-bug repellent combinations are sold, but because the Food and Drug Administration regulates sunscreen and the Environmental Protection Agency regulates insect repellent, guidance for using these combo products is in limbo since they don't really belong to either agency. Complicating the issue, Canadian researchers recently tested human skin cells and found questions beyond the all-in-one products: Spraying on DEET and then rubbing on sunscreen actually increased DEET absorption the most.

Be alert when you're sitting at the outdoors bar for your post-dive drinks – no-see-ums wake up when the sun goes down and are most active at dawn and dusk. If possible, wear long-sleeved shirts, long pants and socks. Make them light-colored and avoid dark or bright colors. Thoroughly spraying clothing and fine-mesh screens and bed nets with permethrin will give added protection (also dry them thoroughly before use). Aerosol insecticides can also be used in rooms to clear them of pests.

The most effective way to fend off no-see-ums is to take a liveaboard trip, but the odds of bringing home anything worse than itchy welts are too small to require a change of dive travel plans. Still, it makes sense to take aggressive steps to avoid becoming the main course for these biting bugs.

– Ben Davison

The Warmest Wetsuit Lining Ever?

One manufacturer swears it's wool, but is that just sheep pucky?

Over the years, wetsuit manufacturers have tried various linings to improve strength, warmth and comfort, such as Lycra, plush, and brand names that sound metallic – titanium and Henderson Gold – but aren't. The latest innovation is a material mankind has been using for more than 2,000 years – wool, particularly from Merino sheep.

This super-wooly animal first became valuable when Arab Moors brought flocks into Spain. During the Middle Ages, its wool was so prized that it was made illegal, on pain of death, to export a Merino sheep from Spain, lest it break the kingdom's dominance of the wool trade. The intensive grazing of Merino sheep stocks in those years gave Spain the stark landscape it has today. Nowadays, the finest Merino flocks are found in New Zealand.

Merino fleece has particularly soft, strong and extra-long hollow fibers. Its hydrophobic outer scales and hydrophilic inner cells keep the sheep – and those wearing garments made from their wool – extremely warm and dry. British designer John Gordon, who has been developing wetsuits for more than thirty years, tried Merino as a suit lining and concluded that it outperforms synthetic materials in thermal efficiency. The lining helps to reduce water movement inside the suit, and it's incompressible, therefore unaffected by depth. Gordon claims that the wool is exothermic, so it produces heat as it gets wet.

Pinnacle Aquatics, based in Livermore, CA, is the sole manufacturer of Merino-lined wetsuits and drysuits. In its ads, Pinnacle touts tests by the British Textile Technology

Group (BTTG) that state the wetsuits offer a 35 percent increase in thermal efficiency over synthetic linings. However, Pinnacle doesn't mention in the ads that it commissioned those studies. Researchers took two neoprene samples, one with Merino lining and one without, wrapped them between metal plates and immersed them in cold water. Then electrical currents were used to generate heat in one of the plates; the amount of heat detected in the other plate revealed the insulating properties of the sample. For comparison, the test was also conducted in a dry state. BTTG's results found that the Merino-lined neoprene resists thermal change 35 percent better when wet and 35.2 percent better when dry.

Will You Smell Like Wet Sheep?

It's one thing to test fabric swatches in a lab, but no study has been done on humans in a variety of garments to show similar results. What about the itchiness associated with wool, like those scratchy sweaters Mom made you wear? And what does peeing in a Merino-lined wetsuit do to the wool?

"I have seen no test results published in a reputable journal, I've only seen marketing stuff," says Bob Stinton, vice president of engineering at Diving Unlimited International, a rival drysuit manufacturer. He believes polyester and polypropylene garments still beat wool garments hands down. "Wool fibers have little burrs on them, much like thorns on a rose stem, and these burrs give wool their scratchy feel," he writes in a letter on his company's Web site titled *The Truth About Wool as Drysuit Insulation*. "They are why silk is used as a layer under wool garments. Silk does not have any great insulating property; its primary purpose is

to eliminate the scratchy feeling." Stinton also writes about how lanolin, the natural oil in wool that keeps sheep dry and warm, is also odorless, can make those wearing wool in watery conditions "smell like a herd of wet sheep."

Pinnacle Aquatics' president George Stauffer issued a quick rebuttal. "Though lanolin is present in raw, unprocessed wool, Pinnacle's Merino lining system contains zero lanolin," he wrote back in a detailed, six-page memo titled *Setting the Record Straight About Merino Lining*. "Just as the synthetics industry has moved technologically forward, so has the wool industry's ability to harvest and process wool, particularly merino wool. Today's merino clothing is not only soft and warm; it doesn't have any more particular odor than any other fabric....Merino's excellent moisture absorption and uneven structure prevent the buildup of odor-causing bacteria, whereas these bacteria thrive on the exposed surface of synthetics."

Stauffer says the "little burrs" concept is incorrect. "Wool fibers do have scales, but these scales don't have anything to do with the scratchy feeling that some wools create. Merino is not everyday wool, it is a very specific type with an extremely fine micron count, and is so soft that it is often used to make baby clothing. Some cheap wool garments may have a scratchy feel, but they are not made of merino."

Back and forth among rivals doesn't prove anything underwater. Feedback from divers does. *Undercurrent* asked several divers who've used Merino-lined wetsuits for their thoughts. All of them were positive. Subscriber Jeff Rose (Harrison Township, MI) says a merino-lined suit is an outstanding option for divers easily chilled in water temperatures below 80 degrees. "I have purchased quite a few suits

Faulty Gear? Contact Your Dealer, Not the Manufacturer

In our July issue, we gave a "thumbs down" to Sherwood Scuba for failing to give good customer service. *Undercurrent* reader Thomas Cranmer bought a Sherwood BC on Scuba.com and when it became faulty, he tried to contact Sherwood directly but didn't receive a reply until he contacted the U.S. Product Safety Commission. Subscriber Kent Roorda never heard back from Sherwood about his defective dive computer.

Why didn't they contact their dealer or dive shop first, asked a few other *Undercurrent* subscribers. "All a customer has to do is to bring a faulty product back to the authorized dealer and replacement or repair is quick, painless, and usually free," says Rick Maxwell (Totowa, NJ), a dive shop owner and Sherwood dealer. "If someone had problems with their car, would he bring it back to his local dealer or ship it back to Detroit? It's our job as dealers to handle customer service issues with any product we sell."

Terry Davis (Roswell, NM) says too many divers have become dependent on the Internet and have sacrificed the benefits of a relationship with their local dive shop. "When Cranmer bought his BC through Scuba.com, did he check first that it was an authorized Sherwood dealer? Internet buyers don't realize that many items aren't sold through authorized dealers, meaning the Web sites aren't responsible for warranty or repairs after the purchase."

On its Web site, Scuba.com says it is an authorized dealer but "you should not take the word of the dive provider, even us, as to whether or not they're authorized dealers. Contact the manufacturer directly and ask them."

Points well taken. But so is ours. Rather than ignore their customers, Sherwood Scuba could have responded to these two gentlemen and directed them to their nearest dealer. To ignore their questions is not good customer service.

Secondary Drowning: A Few Drops Can Be Fatal

Last spring, British diver Nigel Braybrooke swam through the breakwater at a Devon beach for his first dive of the season. He prefers to surface-swim with his regulator, but his lack of conditioning soon showed, and he became exhausted swimming against the tide. Because the surface was calm, Braybrooke took his regulator out to gulp more air. Suddenly a small wave broke over his head, causing him to cough and splutter, but he reached his mark and made his dives with no trouble. He had a slight cough the next day, flu-like symptoms on the second, then shortness of breath, hot and cold flashes, shivering and heavy coughing on the third.

Braybrooke was presenting all the signs of “secondary drowning.” It’s not a recognized diagnosis, but a slang term for development of pulmonary edema, the accumulation of water on the lungs. It’s usually associated with someone who suffered “near drowning,” having inhaled water into the lungs prior to death. But dive accident reports show that inhaling a fine mist from faulty regulators can cause the same thing. Braybrooke’s doctor told him he was drowning in his own fluid.

Secondary drowning happens when water enters the airway and causes the spasm of the glottis. Only a small amount of water needs to be inhaled to cause problems. When Braybrooke was taking huge gulps of air, small amounts of water were delivered deep into the lungs. A chemical reaction takes place, drawing fluid from the bloodstream into the alveoli, increasing fluid levels within the lungs and causing respiratory distress. Because it can take up to 72 hours for symptoms to become fully apparent, secondary drowning is often mistaken for a chest infection or pneumonia. Braybrooke got diuretics to flush out the fluid, steroids for inflammation and antibiotics. He was fully fit in 10 days.

Diving circumstances that can cause secondary drowning involve faulty demand valves that let in a fine mist of water; side-mounted demand valves which let water in if tilted at an angle; and buddy breathing. Richard Moon, MD, medical director for Divers Alert Network, says divers who’ve inhaled significant amounts of water should get medical attention even if they feel okay. And if you’re going to be facing heavy-duty surface swims, make sure you’re fit for the task and keep your regulator or snorkel in your mouth while doing so.

Parts of this story were excerpted from “Take Your Breath Away,” written by Nigel Braybrooke and published in DIVE magazine.

to try to keep my wife warm. Her last suit was a two-piece 3mm O’Neill Farmer Jane. Unless the water was at least 82 degrees, she used both pieces, and still called many dives at 40 minutes because she started to get chilled. I purchased a Pinnacle Fusion 5/4 before our trip to Fiji last fall. And guess what? She made 15 dives during the week in 79-degree water temperatures and never once was cold. In fact, she said she was often a bit warm. For many people, this suit would work well for temperatures into the upper 60’s with a hooded vest.”

An Expert Diver’s Underwater Test

Undercurrent works closely with the British magazine *Diver*, which has sizeable resources to test diving equipment and is known to do so without bias or favoritism. John Bantin, *Diver’s* technical editor, tested a Pinnacle Aquatics Polar merino-lined suit while at the Red Sea during the winter. The suit is a one-piece design made with a mix of 5mm and 7mm neoprene, plus a front-entry zipper. Soft latex seals at the ankles hold water out, and long outer cuffs can be zipped down over dive boots. A chimney seal in the sleeve and wrist cuffs with O-ring-type seals at the ends also reduce flushing. Bantin found the Merino lining absorbed and retained the water that did enter the suit, creating a waterlogged layer between his skin and the suit, which can add up to 3mm of extra insulation.

Merino wool is knitted into a tough cloth but according to Bantin, “It doesn’t feel itchy against the skin because the wool is so fine, and because of its ability to draw water away from its surface it doesn’t really feel soggy at all,” even when being donned again after a dive.

The Polar suit is cut with pre-bent arms and legs, and gussets on the inner curve of the elbows and knees give mobility. When he slipped on the attached hood and closed the chest zip, Bantin says he felt “well-insulated from the outside world.” He needed no help getting in and out of his Polar and says, “It proved to be one of the most comfortable and effective suits I have ever used – almost as warm as a drysuit but as unencumbering as a wetsuit.”

There were only two downsides, he says. The first was “the extra lead I appeared to need to carry to counteract its natural buoyancy.” Second, “I got a bit of grief from the boat captain for taking 75 minutes over a dive while the others were coming back well within the hour, but he was confusing me with someone who was not relishing the comfort of this suit.”

“I can definitely tell you it is not a substitute for a drysuit,” Bantin reported. “However, it is a very warm wetsuit and I would say it is good (for me) down to 68 degrees. Someone with more body fat would probably be happy to use it in 61 degrees.”

Since his test, Pinnacle has begun marketing its Extreme model, originally designed for commercial divers, to the retail market. With 8 mm neoprene in the torso and 6mm in the extremities, it has the Merino lining and other features of the Polar suit, along with Kevlar kneepads, rubber shoulder pads and abrasion-resistant exterior material. The price is \$543, compared to \$480 for the Polar. Contact Pinnacle

Aquatics (925-606-8300 or www.pinnacleaquatics.com) to find a local dealer (Pinnacle does not sell its suits by mail order). Most dealers don't stock a full selection, but you should be able to check out the suit's construction and lining, then place an order through the dealer.

- Larry Clinton

Pacific Lionfish Now Common in Caribbean

tax-deductible trips research their impact

There is hardly a fish more graceful than the beautiful lion fish, found throughout the South Pacific and Indonesia. It has feathery fins, segmented into many soft and willowy rays, that flow like curtains in a breeze. Although it's a treat to see one, they have become an unwanted addition to the Atlantic and Caribbean as an invasive species whose impact is unknown, but surely unwanted. Besides being a predator unrecognizable to Caribbean reef fishes who haven't learned to keep their distance, their rays are poisonous, protecting them against other predators, humans included.

They've been reported as far east as Bermuda and as far north as Long Island, since the first sighting in August 2002 by local divers off the North Carolina Coast. Two years later, a National Oceanic and Atmospheric Administration (NOAA) expedition collected 155 lionfish in the same area, showing that they are spawning and spreading.

NOAA thinks the invasion started in 1992 when six lionfish were accidentally released in Biscayne Bay, Florida, when a beachside aquarium broke open during Hurricane Andrew. Lad Akins, director of special projects for the Reef Environmental Education Foundation (REEF), says more may have been intentionally released by aquarium tank owners. "Lionfish are common aquarium fish but when they got too big for their tanks or started eating other fish, people may have just dumped them out of the tank and into the ocean."

Undercurrent subscribers have reported them in many places. Diving in February near Providenciales in the Turks and Caicos, Richard Sziede (Reston, VA) saw a lionfish and sent his footage to NOAA, which replied that Provo was the farthest west lionfish have been sighted so date. Paul Cahase saw three while on a Blackbeard's Cruise in Bimini, while Steven Rosenfeld (Westlake Village, CA) and Garry Gough (West Paterson, NJ) spotted them off the North Carolina coast.

Scientists don't know much about the ecological impact of lionfish in the Atlantic and Caribbean but they are major predators in their native reef environments and they have no natural enemies in these waters. As they spread, more

encounters between people and lionfish will probably lead to more stings. NOAA and REEF say it's unlikely they'll ever be eradicated from North American waters, so it's more barbaric than useful to kill them. "We've seen them in every type of habitat, from mangroves and shallow coral reefs to as deep as 380 feet," says Akins. "They're like cockroaches - - they eat a lot and spawn a lot, so they thrive easily."

To track their spread, REEF asks divers to report lionfish sightings on its Web site. It is also hosting dive expeditions for volunteer sport divers to help find lionfish and learn about invasive species' impact on reefs. *Undercurrent* subscriber Dan McGrory (Holbrook, NY) went on the April expedition, held on Blackbeard's Cruises boats *Morningstar* and *Pirates' Lady*, to see how far lionfish had spread into the Bahamas. "In a week's time, REEF staff and 15 volunteers collected more than 30 lionfish, ranging in size from one to eight inches, which shows they're reproducing," he reports. "We found lionfish on 90 percent of our dive sites." Divers were given buoys to deploy when they spotted one, and more intrepid divers helped with collecting them. On the boat, lionfish were euthanized with a mix of clove oil and alcohol, then dissected to reveal their stomach contents. Meals included juvenile yellow and blue head wrasse, shrimp, crabs, Spanish hogfish, gobies and other fish. They were then put in ziplock bags and frozen for shipping to NOAA researchers in North Carolina.

The next REEF expedition is October 20 to 26 in Eleuthera aboard the *Cat Ppalu*, and will focus on the lionfish's feeding impacts, short- and long-term routines, recent spawning activity and impact to reefs' cleaning stations. The cost is \$1,395, plus a \$55 port tax and \$10 park fee. Next is a trip with Stuart's Cove Dive Bahamas, November 11 to 17, at the reefs and walls on the southwest end of New Providence; the cost is \$998. All expenses you incur on a trip with a bona fide 501 (c)3 nonprofit organization doing legitimate research are tax deductible, airfare included, but verify it with your own accountant. More trips are planned. For more information, contact Akins, who will be supervising the trips, at lad@reef.org.

When Lightning Strikes During a Dive

Florida gets more lightning strikes than any other state, and its most recent victim was diver Stephen Wilson, 36, who died in July when a lightning strike hit his tank. Despite a severe thunderstorm warning being in effect, Wilson went diving with three friends in a small boat near Deerfield Beach, 40 miles north of Miami. Wilson had resurfaced 30 feet from the boat when the lightning bolt struck his tank and knocked him unconscious. The other divers struggled to get Wilson back into the boat and radioed for help, but to no avail. He was pronounced dead from electrocution minutes later.

While 75 percent of fatalities by lightning strikes in the U.S. are in open fields or near trees, 12 percent take place in or near the water, in boats and on docks. So potentially, lightning is the biggest weather danger for divers.

Oceans rarely attract lightning because the surface water does not heat up enough to cause the positive charge needed for lightning to occur. Also, water is always the lowest object around, compared to land's higher elevations and warmer temperatures. But the main problem for divers is that water is a good conductor of electricity, therefore the current of a lightning strike can be carried through water for significant distances. The last jump of a forming lightning bolt is only 100 to 150 feet long, so lightning can strike water more than 150 feet from shore and even if you are considerably below the surface, you can still get electrocuted. However, because the surface of a lake isn't covered with dead fish after it's struck suggests the current weakens in short distances.

But what precautions should a diver take while caught in a storm? Are you safer in the water than in the boat? If shore diving, should you stay in the water or go ashore? When I took my basic certification course in the 70's, we were told to get out of the water in a lightning storm and, better yet, didn't dive if lightning threatened. Today, however, diving courses are shorter than ever so the question of what to do about lightning is often ignored. PADI's Open Water manual has no reference to lightning or storms.

Jed Livingston, vice president of training for NAUI, says it's an obscure risk so there's no need to cover it in courses. "It might be in our First Aid book but it discusses how to treat an electrical burn. We assume divers already learned what to do a long time ago during their swimming class in school." Scuba Schools International leaves it up to the instructors' discretion, says training director Dennis Pulley. "Those who live in areas more affected by lightning are more likely to discuss it with students than those who don't."

Lightning is likely to strike the highest thing around so if you're on the water during a storm, the boat and everyone in it are prime targets. Diving underwater may not be an option because lightning can be even more deadly when its electricity flows through the waves. Underwater caves can be an especially dangerous location. Two cave divers were shocked by lightning while diving in Florida's Ginnie Springs Cave. They were 900 feet from the entrance when lightning struck - - twice - - but they survived.

If the forecast is for thunderstorms, don't go out on the water. Or you should return to shore before the storm arrives. If you're out diving and can see lightning or hear thunder, you're already at risk for a lightning strike. If the clouds are coming your way, it's time to head for shore. If you see lightning, the flash-to-bang method can also help determine whether lightning is moving closer (sound travels about one mile every five seconds).

If you're in a boat during a storm, David Sawatzky, M.D., medical columnist for the Canadian magazine *DIVER*, says it's best to huddle in the middle of the boat as far as possible from water, electrical equipment, radios and anything metal. Lower the antenna and anything else sticking up on the boat. If there is a lightning protection system on the boat, don't touch it.

The ultimate advice is to avoid diving or being in or near water during a storm, and 30 minutes before and after it hits. And don't sit out on the dock or climb to the top of the boat to enjoy the lightning show.

Flotsam and Jetsam

How Much Does Air Cost? *Dive Center Business* recently surveyed dive stores about the price they charge for air and Nitrox fills. Compared to the same survey done in 2005, air is now more expensive to breathe. The average charge for a standard air fill is \$5.67, compared to \$4.97 in 2005, a 12 percent increase. The typical Nitrox fill increased 10 percent, to \$11.19 from \$10.09. The Southwest

typically has the cheapest air fills, averaging \$4, while the Southeast has the cheapest Nitrox fills, averaging \$10.14. The Rocky Mountain states charge the most for both, averaging \$6 and \$13.22 respectively.

Skeleton Found in Scuba Gear. Investigators are trying to identify a skeleton found inside scuba gear last month in Commencement Bay near Tacoma, WA. A firefighter doing a recreational dive spotted the body 300 feet from shore. "All he saw was a white skull but a complete suit, tank, BCD and weights," says Tacoma detective Ed

Troyer. "It could have been there for years, and at least nine months." An underwater robot was sent to retrieve the body, 200 feet below the surface, and medical examiners are now trying to identify the body from records of divers gone missing in the Bay, as well as other areas of Puget Sound.

The Downside of Red-Eye Flights.

While divers love the Friday red-eye flight from Houston to Bonaire, most who arrive at 6 a.m. find they can't check in till the afternoon. They may even find the front door locked, as did *Undercurrent* readers Frank Hall and Carole Ott (Floyds Knobs, IN) at Den Laman. The office didn't open until 8:30 am. "We sat at a picnic table and waited for two hours, a real bummer after being awake all night." Usually, if you want a room upon arrival, you'll have to pay for an extra night. But sometimes you can find a half-day rate not just in Bonaire, but Fiji and any other destination where you arrive at sunrise.

Turtle Farts Can Be Dangerous. A flatulent turtle set off an aquarium's fire alarm after being fed a treat of Brussels sprouts. It broke wind and the bubble it created was so strong, it set off an emergency sensor inside its tank at the Sea Life Centre in Weymouth, England,

indicating water was at a dangerously high level. According to marine biologist Sarah Leaney, who rushed to the tank, "I saw the turtle beneath the tube containing the sensor. A few large bubbles emerged from beneath him and rose to the surface next to the tube." Humans can experience similar side effects if they eat too many sprouts.

Speaking of Turtles. Many sea turtle populations are in trouble, but the Pacific leatherback is closest to extinction, its population dropping 95 percent in just 25 years. In his new book *Voyage of the Turtle*, scientist and marine conservationist Carl Safina travels to leatherbacks' nesting beaches and feeding grounds from New Guinea to Northern California and delves into the quirky biology of the turtle, which he describes as "dinosaur and whale, with a hint of albatross." Safina also gives an updated status of six other sea turtle species, the threats they face, and what conservation methods are working. Go to www.undercurrent.org, click on "Diving Books," then the Amazon icon at the bottom of the page, and *Undercurrent's* profit from any book you buy through our Web site will go to preserve coral reefs.

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